Listing of Claims:

1. (Currently Amended) A method of correcting spectral deformations in ~~the~~ a voice, introduced by a communication network, comprising an equalization operation ~~of equalization~~ on a frequency band ~~(F1-F2)~~, adapted to ~~the~~ an actual distortion of ~~the~~ a transmission chain, ~~this~~ said operation being performed by ~~means of~~ a digital filter having a frequency response which is a function of ~~the~~ a ratio between a reference spectrum and a spectrum corresponding to ~~the~~ a long-term spectrum of ~~the~~ voice ~~signal~~ signals of ~~the~~ speakers, ~~principally characterised in that it comprises~~ comprising:

[[*]] ~~prior to the operation of equalisation of the voice signal of a speaker~~ communicating[[: - the]] a constitution of classes of speakers with one voice reference per class prior to the equalization of a voice signal of a speaker[[,]];

[[*]] ~~then, for a given speaker~~ communicating[[: - the]] a classification of ~~this~~ the speaker, ~~that is to say his allocation~~ such that the speaker is allocated to [[a]] the class from predefined classification criteria ~~in order to make~~ which causes a voice reference which is closest to the voice of the speaker to ~~his own~~ correspond to the speaker[[him,]];

[[- the]] performing equalization ~~equalisation of the digitised~~ of a digitized signal of the voice of the speaker ~~carried out~~ with, as a reference spectrum, the voice reference of the class to which the ~~said~~ speaker has been allocated;

wherein communicating the constitution of classes of speakers comprises selecting a corpus of N speakers recorded under non-deteriorated conditions, determining a long-term frequency spectrum of the selected corpus of N speakers, classifying the speakers of the corpus according to their partial cepstrum, and

calculating the reference spectrum associated with each class to obtain the voice reference corresponding to each of the classes;

wherein said ceptrum is calculated from the long-term spectrum restricted to the equalization band and by applying a predefined classification criterion to these cepstra to obtain K classes.

2. (Canceled)

3. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to Claim [[2]] 1, ~~characterised in that~~ wherein the reference spectrum on the equalization ~~equalisation~~ frequency band ~~(F1-F2)~~, associated with each class, is calculated by Fourier transform of ~~the centre~~ a center of ~~the~~ a class defined by its partial cepstra.

4. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to Claim 1, [[characterised in that:]] wherein [[*]] the classification of a speaker comprises:

[[-]] use of ~~the~~ a mean pitch of the voice signal and [[of the]] partial cepstrum of ~~this~~ the voice signal as classification parameters[[,]]; and

[[-]] ~~the application of~~ applying a discriminating function to ~~these~~ the classification parameters ~~in order~~ to classify the ~~said~~ speaker.

5. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to ~~any one of the preceding claims~~ Claim 1, ~~characterised in that it also comprises a~~

~~step of pre-equalisation of~~ further comprising:

pre-equalizing the ~~digital~~ digitized signal by a fixed filter having a frequency response in the frequency band ~~(F1-F2)~~, corresponding to an ~~the~~ inverse of a reference spectral deformation introduced by ~~the~~ a telephone connection.

6. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to ~~any one of the preceding claims~~ Claim 1, ~~characterised in that~~ wherein the ~~equalisation~~ equalization of the ~~digitised~~ digitized signal of the voice of [[a]] the speaker comprises:

[[-]] ~~the~~ detection of [[a]] voice activity on ~~the~~ a reception line ~~in order~~ to trigger a concatenation of ~~processings~~ processes comprising ~~the~~ calculation of the long-term spectrum, the classification of the speaker, ~~the~~ calculation of ~~the~~ a modulus of the frequency response of the ~~equaliser~~ equalizer filter restricted to the ~~equalisation~~ equalization band ~~(F1-F2)~~ and ~~the~~ calculation of ~~the~~ coefficients of the digital filter differentiated according to the class of the speaker, from this modulus,

[[- the]] control of the filter with the coefficients obtained, and

[[- the]] filtering of ~~the~~ a signal emerging from ~~the pre-equaliser~~ a pre-equalizer by the ~~said~~ filter.

7. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to Claim 6, ~~characterised in that~~ wherein the calculation of the modulus ~~(EQ)~~ of the frequency response of the ~~equaliser~~ equalizer filter restricted to the ~~equalisation~~ equalization

band ~~(F1-F2)~~ is achieved ~~by the use of~~ in accordance with the following ~~equation~~ relationship:

$$|EQ(f)| = \frac{1}{|S\_RX(f).L\_RX(f)|}\sqrt{\frac{\gamma_{ref}(f)}{\gamma_x(f)}}, \qquad \text{~~(0.3)~~}$$

wherein ~~in which~~ $\gamma_{ref}(f)$ is the reference spectrum of the class to which the ~~said~~ speaker belongs, ~~and in which~~ L_RX is ~~the~~ a frequency response of the reception line, S_RX is the frequency response of ~~the~~ a reception signal and $\gamma_x(f)$ is the long-term spectrum of ~~the~~ an input signal [[x]] of the filter.

8. (Currently Amended) [[A]] The method of correcting spectral voice deformations according to Claim 6, ~~characterised in that~~ wherein the calculation of the modulus ~~(EQ)~~ of the frequency response of the ~~equaliser~~ equalizer filter restricted to the ~~equalisation~~ equalization band ~~(F1-F2)~~ is ~~done using~~ achieved in accordance with the following relationship ~~equation~~:

$$C_{eq}^{p} = C_{ref}^{p} - C_{x}^{p} - C_{S\_RX}^{p} - C_{L\_RX}^{p}, \qquad \text{~~(0.13)~~}$$

wherein ~~in which~~ C_{eq}^{p}, C_{x}^{p}, $C_{S\_RX}^{p}$ and $C_{L\_RX}^{p}$ are ~~the~~ respective partial cepstra of the adapted ~~equaliser~~ equalizer, ~~of~~ the input signal x of the ~~equaliser~~ equalizer filter, ~~of the~~ a reception system and ~~of~~ the reception line, C_{ref}^{p} being the reference partial cepstrum, ~~the~~ a center ~~centre~~ of the class of the speaker; and

wherein the modulus ~~(EQ)~~ restricted to the band ~~F1-F2~~ being calculated by discrete Fourier transform of C_{eq}^{p}.

9. (Currently Amended) A system for correcting voice spectral deformations introduced by a communication network, comprising adapted ~~equalisation~~ equalization means in a frequency band ~~(F1-F2) which comprise~~, the system comprising:

a digital filter ~~(300) whose~~ having a frequency response which is a function of ~~the~~ a ratio between a reference spectrum and a spectrum corresponding to ~~the~~ a long-term spectrum of a voice signal[[,]]; and ~~principally characterised in that these means also comprise~~

[[-]] means ~~(400) of~~ for processing the voice signal ~~for calculating the~~ to calculate coefficients of ~~the~~ a digital signal; said means for processing the voice signal including ~~provided with~~:

[[•]] a first signal processing unit ~~(400A)~~ for calculating ~~the~~ a modulus of ~~the~~ a frequency response of ~~the equaliser~~ an equalizer filter restricted to ~~the equalisation~~ an equalization band ~~(F1-F2)~~ according to the following ~~equation~~ relationship:

$$|EQ(f)| = \frac{1}{|S\_RX(f).L\_RX(f)|}\sqrt{\frac{\gamma_{ref}(f)}{\gamma_x(f)}}, \quad \text{~~(0.3)~~}$$

wherein ~~in which~~ $\gamma_{ref}(f)$ is the reference spectrum, which may be different from one speaker to another and which corresponds to a reference for a predetermined class to which ~~the said~~ a speaker belongs, ~~and in which~~ L_RX is ~~the~~ a frequency response of ~~the~~ a reception line, S_RX is the frequency response of ~~the~~ a reception signal and $\gamma_x(f)$ is the long-term spectrum of ~~the~~ an input signal [[x]] of the filter; and

[[•]] a second processing unit ~~(400B)~~ for calculating ~~the~~ a pulsed response from the calculated frequency response modulus ~~thus calculated, in order~~ to determine ~~the~~ coefficients of the equalizer filter differentiated according to the class of the speaker.

10. (Currently Amended) [[A]] The system for correcting spectral voice deformations according to Claim 9, ~~characterised in that~~ wherein the first processing unit ~~(400A)~~ comprises means ~~(414b, 428b) of~~ for calculating ~~the~~ a partial cepstrum of the ~~equaliser~~ equalizer filter according to the following relationship ~~equation~~:

$$C_{eq}^{p} = C_{ref}^{p} - C_{x}^{p} - C_{S\_RX}^{p} - C_{L\_RX}^{p}, \qquad \text{~~(0.13)~~}$$

wherein ~~in which~~ C_{eq}^{p}, C_{x}^{p}, $C_{S\_RX}^{p}$ and $C_{L\_RX}^{p}$ are ~~the~~ respective partial cepstra of ~~the~~ an adapted ~~equaliser~~ equalizer, ~~of the~~ an input signal [[x]] of the ~~equaliser~~ equalizer filter, ~~of the~~ a reception signal and ~~of the~~ a reception line, C_{ref}^{p} being ~~the~~ a reference partial cepstrum, ~~the centre~~ a center of ~~the~~ a class of the speaker[[,]] ; and

wherein the modulus of ~~(EQ)~~ the equalizer filter restricted to the frequency band ~~F1-F2~~ is ~~then~~ calculated by discrete Fourier transform of C_{eq}^{p}.

11. (Currently Amended) [[A]] The system for correcting spectral voice deformations according to Claim 9 ~~or 10~~, ~~characterised in that~~ wherein the first processing unit comprises a sub-assembly ~~(420)~~ for calculating ~~the~~ partial cepstrum coefficients ~~of the partial cepstrum~~ of a

speaker who is communicating and a second sub-assembly ~~(410)~~ for effecting ~~the~~ a classification of ~~this~~ the communicating speaker, ~~this~~ said second sub-assembly comprising a block ~~unit (411)~~ for calculating ~~the~~ a pitch ~~F_0~~, a block ~~unit (412)~~ for estimating ~~the~~ a mean pitch from the calculated pitch ~~F_0~~, and a classification block for ~~unit (413)~~ applying a discriminating function to the vector [[x]] having ~~as its components~~ the mean pitch and the coefficients of the partial cepstrum for classifying the ~~said~~ speaker as its components.

12. (Currently Amended) [[A]] The system for correcting spectral voice deformations according to ~~any one of Claims~~ Claim 9 ~~to 11~~, ~~characterised in that it comprises~~ further comprising:

a pre-equalizer ~~pre-equaliser~~;

~~(200) and in that the~~ wherein a signal ~~equalised~~ equalized from reference spectra differentiated according to the class of the speaker is ~~the~~ an output signal [[x]] of the pre-equalizer ~~pre-equaliser~~.

13. (New) The system for correcting spectral voice deformations according to Claim 10, wherein the first processing unit comprises a sub-assembly for calculating partial cepstrum coefficients of a speaker who is communicating and a second sub-assembly for effecting a classification of the communicating speaker, said second sub-assembly comprising a block for calculating a pitch, a block for estimating a mean pitch from the calculated pitch, and a classification block for applying a discriminating function to a vector having the mean pitch and the coefficients of the partial cepstrum for classifying the speaker as its components.